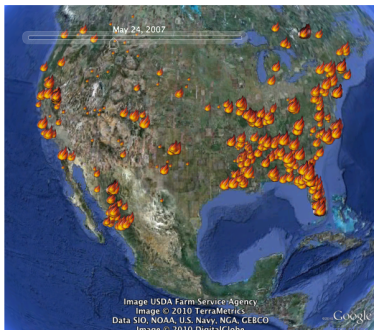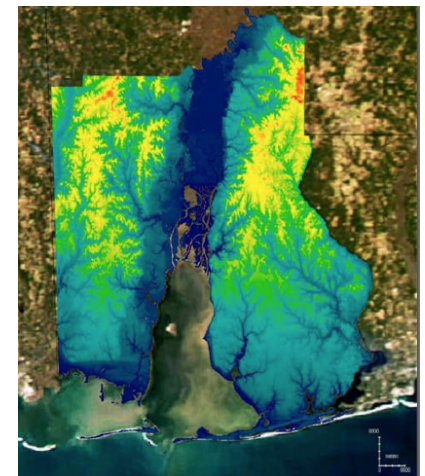# Data Casting for Integration of Applied Science Projects

Ken Keiser and Manil Maskey

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NASA Applied Science Programs
(John Haynes, Program Manager)

- A.28s
  - A suite of projects that will enhance the Gulf of Mexico region's ability to recover from the devastation of the 2005 hurricanes

- A.40s
  - Integrate NASA Earth science research results into decision-making activities in the Gulf of Mexico region

Interacting Projects

- Promoting interactions between projects
- Small regional extent – Gulf Coast and related southeastern US regions
- Focus on decision support – getting information to end-users

Data Management Issues

- Each project is a data/information producer

- Limited level of IT capabilities/support (in some cases)

- Data/information should be available to a variety of end-user applications and tools

- Should be looking for interoperable access for **visualization**

Data Casting + KML

- Data Casting: Geo-enhanced RSS feeds
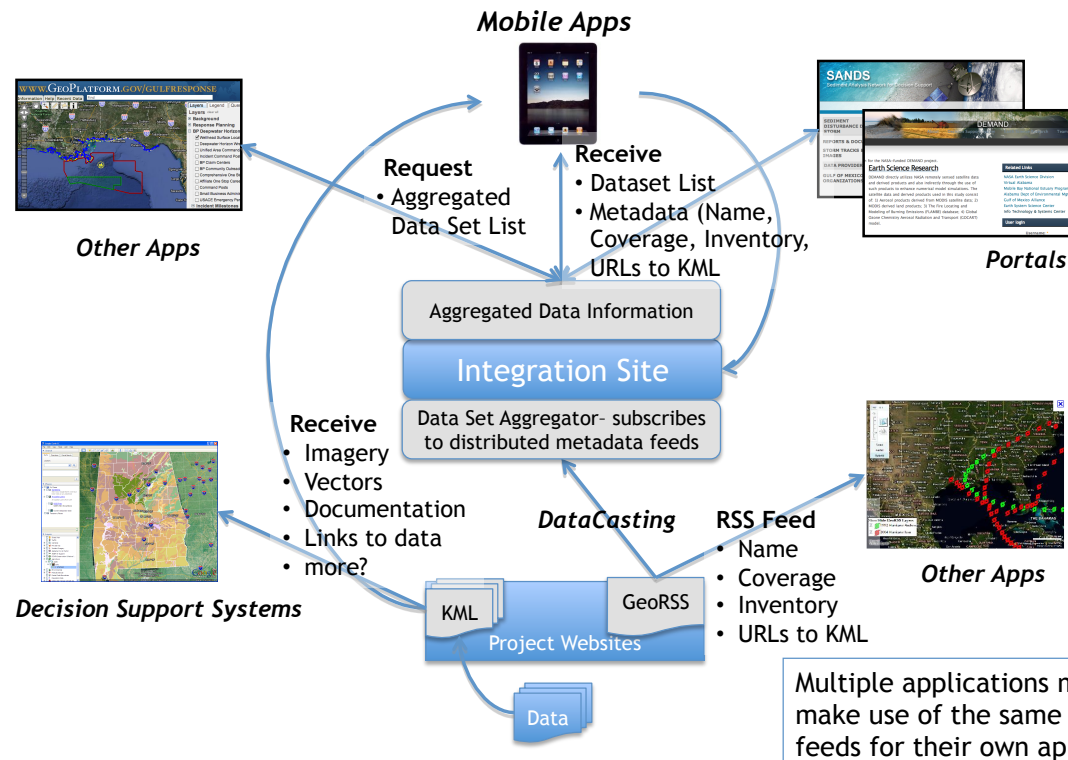- KML: broadly adopted xml wrapper for image (and other) data.

Feed Aggregation

Service(s) to pull together data casts from multiple sources for access by down-stream applications and tools

Putting it Together

Applied Sciences:
Integrated Data Visualization

Mobile Apps

Other Apps

Portals

Request
- Aggregated Data Set List

Receive
- Dataset List
- Metadata (Name, Coverage, Inventory, URLs to KML

Aggregated Data Information

Integration Site

Data Set Aggregator– subscribes to distributed metadata feeds

Receive
- Imagery
- Vectors
- Documentation
- Links to data
- more?

DataCasting

RSS Feed
- Name
- Coverage
- Inventory
- URLs to KML

Other Apps

Decision Support Systems

KML   GeoRSS

Project Websites

Data

Multiple applications may make use of the same GeoRSS feeds for their own approach.

Benefits

- Easy level of technical participation
  - Not easy enough for all data producers yet
- Puts technical burden on application developers (as it should be)
  - Filter feeds for specific purposes
  - Application-specific use of data
- Casts and KML are discoverable on the web for other uses

Example: Cast Aggregation

http://noaaaqdev.itsc.uah.edu/drupal/kmlmap/Feeds
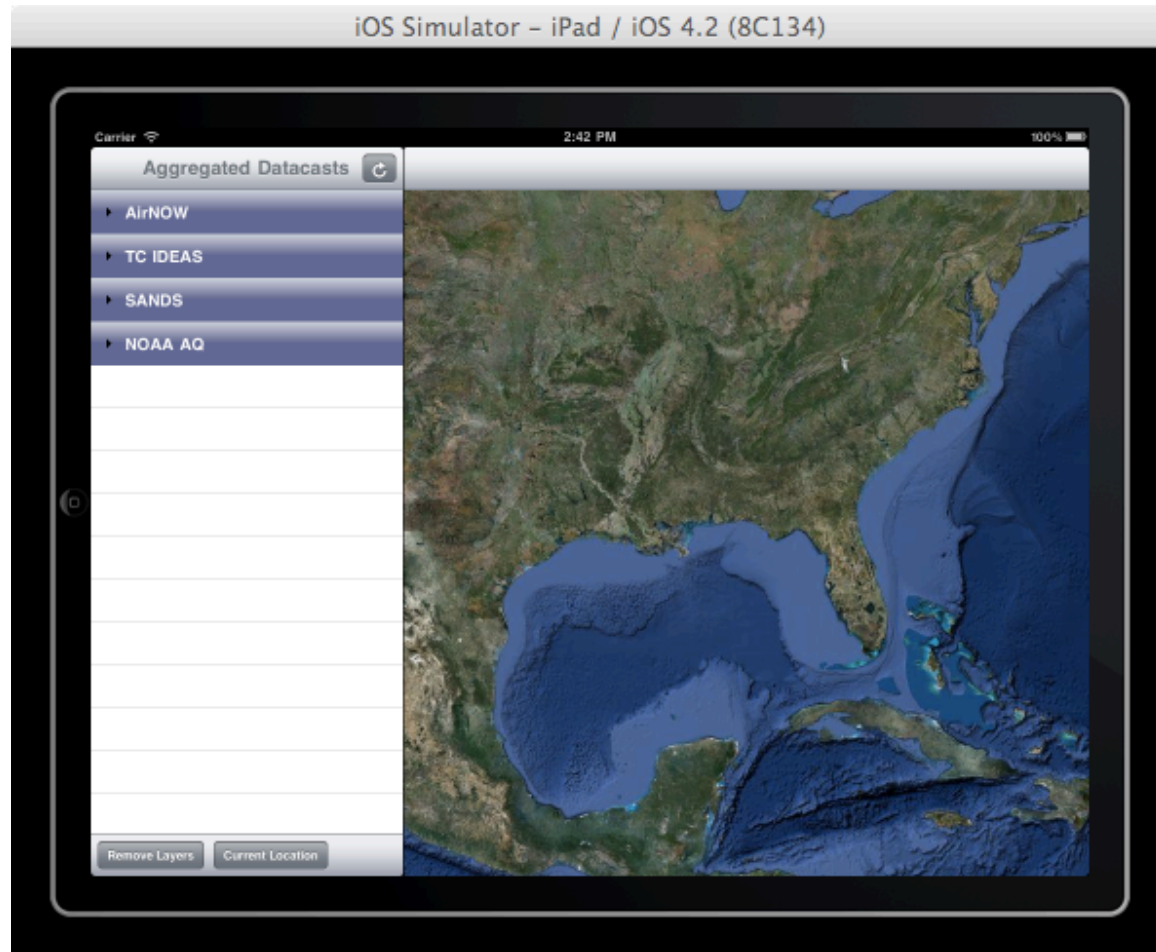
Example: Web Application

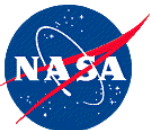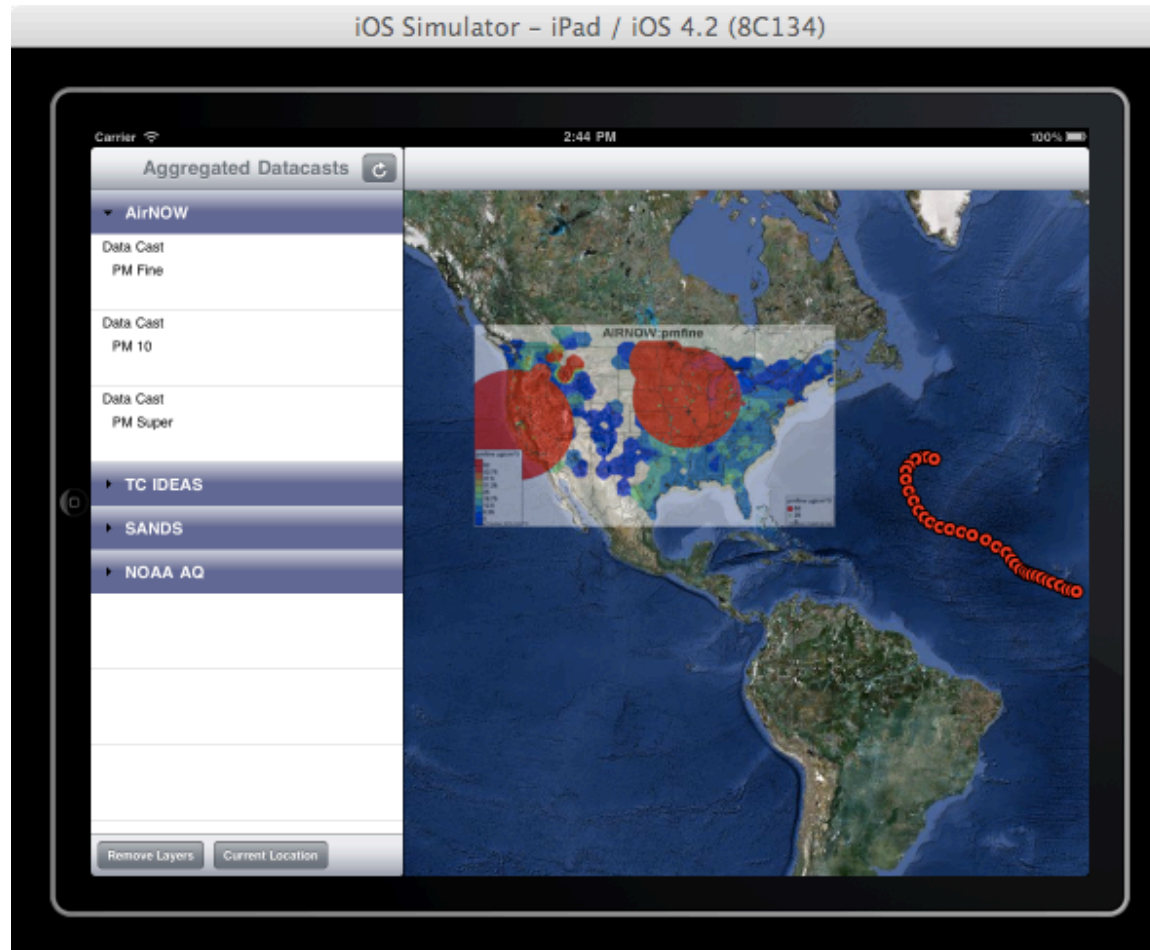
http://noaaaqdev.itsc.uah.edu/drupal/
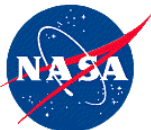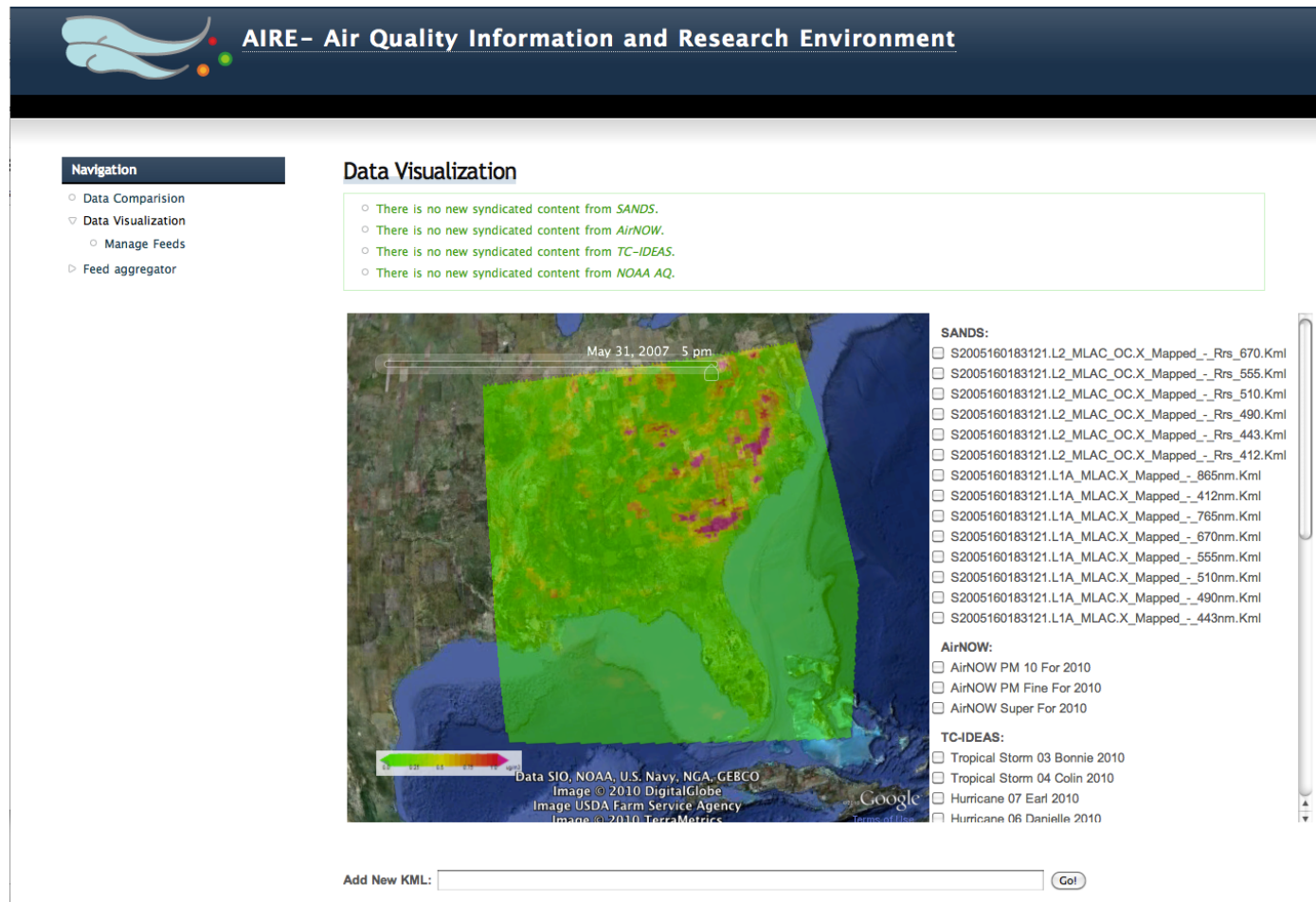
Examples: Mobile App

Examples: Mobile App

To Do

- Make it even easier for data producers
  - Data cast authoring tools
  - KML authoring tools
  - Integrated aggregation/registration of casts
- Integrating more cast technologies with applications